ARIZONA HEIGHT MODERNIZATION

Height Modernization

Many critical Arizona activities require accurate mapping – homeland and border security, wildfire management, disaster response, flood control, subsidence monitoring, pipeline safety, highway construction, growth planning, and infrastructure management. In turn, modern digital maps require precise horizontal and vertical control to be most accurate. Height Modernization is a means to obtain this needed control and accuracy.

Height Modernization will enhance the National Spatial Reference System (NSRS) through the use of Global Positioning System (GPS) technology. The NSRS is the national geodetic reference framework that includes information for each geodetic control monument in the United States and provides accurate knowledge about the size, shape, and position of our environment. The current NSRS in Arizona is inadequate to efficiently support improved mapping capabilities.

Due to land subsidence, the elevation of this spot near Luke Air Force Base in Maricopa County has dropped by more than 18 feet over a 34-year period. Knowledge of subsidence areas is a fundamental requirement for planning infrastructure such as pipelines, canals, and power plants.

Improved Mapping

Height Modernization will provide Arizona a geodetic framework for surveying, engineering and Geographic Information Systems (GIS). These systems and associated technologies are critical for managing public safety, health and welfare. Adding geodetic control to our existing Public Land Survey System will improve mapping capabilities and facilitate access to, and integration of, federal, state, and local map information.

Height Modernization will mean "map modernization" for Arizona. Without Arizona Height Modernization, the production of maps to meet the pressing needs of the state will continue to be extremely costly, and in some cases impossible.

Height Modernization Will Benefit

Wildland Fire
Border and Homeland Security
Emergency and Disaster Response
E911 Dispatch
Drought Monitoring
Flood Insurance Mapping
Pipeline Safety
Land Subsidence Monitoring
Aviation Safety
Critical Infrastructure Management
Precision Agriculture
Land Management
Statewide Map and GIS Integration

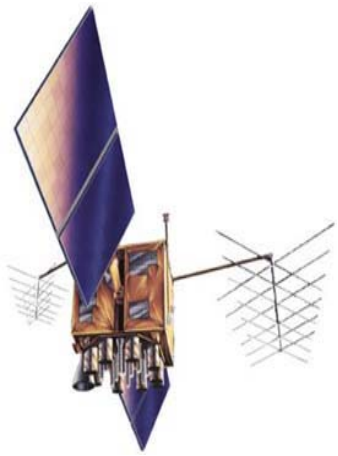
Specific Benefits

States implementing Height Modernization programs are realizing large financial benefits and avoiding costs in many ways. In Arizona, some anticipated savings include:

- Over $1 million annual savings on aerial mapping projects contracted by local, regional and state governments.
- Over $600,000 annual savings on planning and construction costs to the Phoenix District of the Arizona Department of Transportation.
- Over $4 million annual savings to Arizona citizens for reduced surveying costs.

Arizona Height Modernization Forum

The National Geodetic Survey (NGS) conducted an Arizona Height Modernization Forum in April 2004 at the request of the Arizona Professional Land Surveyors (APLS) and the Arizona Geographic Information Council (AGIC). The purpose of the Forum was to determine needs and identify the benefits Arizona would realize through Height Modernization. Many of the benefits identified at the Forum are listed on the previous page. Forum attendees unanimously agreed that Arizona Height Modernization would benefit the state and should be pursued.



By using modern, high efficiency technologies such as GPS (Global Positioning System) satellites, Bar-code differential leveling, LIDAR (Light Detection and Ranging), and IFSAR (Interferometric Synthetic Aperture Radar) the NSRS in Arizona can be extended into priority areas very quickly.

Current Activities

Both AGIC and APLS fully support the need for Height Modernization. The AGIC Data Resources Committee has formed an Arizona Height Modernization Working Group to implement Height Modernization in Arizona. The Working Group has begun to address issues such as statewide needs, priorities, and the organization and administration to manage Arizona Height Modernization.

In addition to important activities identified in the Forum, the Height Modernization Working Group members have identified actions and are pursuing Height Modernization and map modernization to benefit Arizona.

Height Modernization will allow more accurate monitoring of the effects of drought on reservoir levels and aquifers, measure results of tectonic activity across the state, and assess the safety of critical structures such as the Glen Canyon Dam pictured here.

Funding

Federal funding for maintenance and expansion of the National Spatial Reference System (NSRS) is available to state governments through Congressional action to support and fund "Height Modernization". The funds are used locally to maintain and expand the NSRS to meet local and regional needs.

Over the past four years, federal funding of over $18 million has been awarded to eight states for Height Modernization. Individual awards have ranged from $500,000 to $3 million per state annually. Several states, in addition to these initial eight, continue to pursue and are expected to receive funds from future federal budgets.

For More Information

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Information and presentations from the 2004 Arizona Height Modernization Forum may be accessed at:

http://agic.az.gov/hm/

Height Modernization In Arizona Is Map Modernization!